

# NEW power plant takes shape

## Teverola, Italy

Construction of the new 400MW combined cycle power plant in Teverola, north of Naples, is underway. The new gas-fired power station, scheduled to begin commercial operation at the end of 2006, will deliver electricity to the Italian national grid.

It is located near an existing 150MW power plant, partly owned by Foster Wheeler Italiana, within the Indesit white products factory.

Milan-based Foster Wheeler Italiana was awarded the lump sum turnkey EPC contract in June 2004 by SET S.p.A. Our contract includes provision of commissioning services and extends through to performance and reliability testing.



### Italian power market

The liberalisation of the Italian power utility market since 1999 has allowed new players to compete in a previously highly regulated market.

The Italian Power Exchange, officially opened for trading in April 2004, has given fresh impetus to the new operators, who are now looking for high-efficiency power stations.

### CC technology

The combined cycle plant is based on a GE 9FA gas turbine and an A15 re-heat steam turbine from the same manufacturer, in a multi-shaft arrangement.

In a combined cycle plant, natural gas is burnt in a gas turbine to generate electricity. The hot exhaust gases from the turbine are used to generate steam, to produce additional electricity via a conventional steam turbine generator.



### High efficiency

For Teverola, the thermal cycle is based on a three-pressure-level Foster Wheeler heat recovery steam generator. The thermal cycle features high-pressure steam generation at 141 bar(g) and 565°C, reheat at 21 bar(g) and low-pressure steam generation to improve plant efficiency. The expected efficiency of the plant exceeds 56%.

Among the other significant features of the plant is a steam-condensing unit, cooled by air for environmental reasons, a three-winding step-up transformer, an air-insulated switchyard and a concrete machinery hall, which will help contain noise.

### Success factors

Early procurement has been one of the targets of the project team in Milan because vendor information is essential for the timely engineering of the plant.

A construction study has been carried out to address the restrictions imposed by the limited accessibility and storage areas available, as the plant is located within an existing white goods factory and near to another power plant.

### Safety

HSE management has been implemented in all phases of the project from the early design and by means of dedicated reviews plot plan review, hazard analysis, HAZOP study.

### Track record

This is the latest in a series of combined cycle power plant projects executed by our team, confirming once again its in-depth experience in EPC power project execution.